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SURVEY OF INSECT CONDITIONS IN THE TULE RIVER DISTRICT OF THE SEQUOIA NATIONAL FOREST

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by
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Forest Insect Laboratory
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SURVEY OF INSECT CONDITIONS IN THE TULE RIVER DISTRICT OF THE SEQUOIA NATIONAL FOREST

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SURVEY OF INSECT CONDITIONS IN THE TULE RIVER DISTRICT OF THE SEQUOIA NATIONAL FOREST

The following report gives the results of an examination of recent forest insect activities in parts of the Tule River District made by J. M. Miller and myself, August 27 - 29, 1937.

Camp Wishon: Conditions on this area and campground appear favorable to barkbeetle activity and sporadic outbreaks may be expected from time to time. Conditions in general are much improved since the previous examination made in June 1936. At that time red trees were visible scattered throughout the timber on both sides of the canyon. These have largely disappeared, although a few recent fades are evident, showing that infestation is still present. Recent control work has been effective in bringing about the present low status of these infestations. A group of ponderosa pine trees infested with the western pine beetle and engraver beetles, (Ips spp), appeared in early summer on the camp ground. These were thoroughly treated and the broods destroyed. Prompt control measures of the same character are recommended and may be relied upon to prevent such initial attacks from spreading and developing into serious infestations. At present there is no visible infestation on this camp ground. The light infestation in the surrounding stands; principally of the mountain pine beetle in sugar pine, cannot be considered an immediate menace to the intensively used area but should be closely watched for possible increase and spread into the principal areas.

Camp Nelson Area: Current barkbeetle infestations on this intensively used recreational area are at a very low point compared with those of several years past. The decline in these infestations was apparent when the area was examined last year. The peak of the losses during the last epidemic period was reached in 1934. This high point was sustained during 1935, but a decline began in 1936 which has continued with markedly diminishing losses resulting in endemic infestations in 1937. The grouping tendency characteristic of former infestations has completely disappeared which is indicative of normal status. The present visible infestation, based upon tree counts made from visibility points, is estimated to be 12 ponderosa pine and 16 sugar pine trees. These are widely scattered throughout the basin, the greater percentage located south of the Tule River. In view of the endemic character of the 1937 infestations, control work is not recommended.

Lloyd Meadow: The Jeffrey pine stands of this interior basin have long been subjected to periodic outbreaks of the Jeffrey pine beetle which have greatly depleted the mature timber. Infestations of this beetle have been particularly severe on many of the more exposed sites with the result that the present forest cover is largely reduced to young growth and pole sized stock. Examples of two such areas are shown in the photographs on page 4. Drought is probably the principal

factor favoring beetle attack since the greatest loss has occurred on the drier sites of southern exposure. The Jeffrey pine beetle is still active in these stands and several freshly attacked trees were found in only a cursory examination. A condition which may be of importance in sustaining the bark beetle infestations is the presence of flathead incipients, or young larvae forms of Melanophila sp., in trees attacked by the Jeffrey pine beetle; and the larvae workings of these incipients on the boles of old trees previously killed by this beetle. Many green trees showing ratty crowns and sparse foliage were also found to be infested by incipients showing that htese infestations are common and widespread. By far the heaviest current infestations of any in the district are located in these stands.

The winter injury to the foliage of Jeffrey pine, which you reported last spring, was found to be prevalent along the creek bottom in secs. 32 and 33, T 20 S, R 32 E. This type of injury is confined to a narrow belt bordering the creek and does not extend back into the higher elevations. Only the younger trees (up to pole size) are affected. No foliage injury could be detected on trees whose lower branches were 10 to 15 feet above the ground. The lower limbs of most of the affected trees were uninjured. Examination of several injured young trees showed that injury had not occurred below 4 to 8 feet above the ground, or above 15 to 20 feet. Evidently the cause of needle dying was operative only in a stratum of air 10 to 15 feet thick in this zone. It was undoubtedly caused by reflected sunlight from snow and followed a low temperature period when the lower trunk and surface roots of the trees were frozen and unable to supply water to the needles to replace rapid transpiration caused by the heat of reflected sunlight. The lower limbs were not injured because they were covered with snow. The injury has resulted in the death of many tops, and in a few cases, of the entire tree. However, most of these injured trees are recovering and putting out new needles. Examples of this type of injury are shown in the photographs on pages 5 and 6. A few young Sequoias are similarly affected in the upper end of Lloyd Meadow. No insect attack could be discovered in any of these injured trees.

Holby Meadow: The lodgepole pines in this meadow are being gradually taken out by the mountain pine beetle. The rate of loss has been from 20 to 50 trees each year. Old snags and down logs, which still retain on their trunks scorings made by this beetle, are evidence that the infestation has been active for a period of years. About 20 trees were killed in 1936, and 15 trees were successfully attacked this year. This infestation will probably continue with about the same amount of annual loss unless it is cleared up by control measures. Infestations of this character in lodgepole are easily controlled, and in this case would involve treating only a

few infested trees on a small, isolated area. The area presents attractive features as an alpine camp ground and is readily accessible by auto from the popular Quaking Aspen camp. If development into a recreational area is contemplated, the present lodgepole forest should be protected from further losses by cleaning up the beetle infestation.

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Berkeley, California
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10029 - Depletion of mature Jeffrey pine stand at Loyd Meadows caused by the Jeffrey pine beetle. Upper picture shows openings created when beetle killed trees fall. Lower picture shows replacement of stand in these openings by young growth of same species.

100253 - Another example of needle injury caused by solar heat when soil around the upper root system was frozen. Illustrating severe injury of this type The entire upper crown, including tip, is dead. It is doubtful if such trees will survive. Loyd Meadows.

100284 - Foliage injury of young Jeffrey pine caused by sub-normal winter temperatures, followed by solar heat reflected onto needles from surface of snow. The needles on the lower limbs is unaffected because these were covered with snow and thereby protected from solar heat. The terminal of this tree is putting out new needles, indicating that it will recover from the damage.